



## Maine Department of Environmental Protection

### Bureau of Land & Water Quality

#### O&M Newsletter

April 2007

A monthly newsletter for wastewater discharge licensees, treatment facility operators, and associated persons

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### For Practice

1. What is the sludge concentration at which pumping becomes difficult?
  - a. 10%
  - b. 5%
  - c. 2%
  - d. 1%
2. The common parameter mg/L (milligrams per liter) is the same as
  - a. Grains/Gallon
  - b. parts per million (ppm.)
  - c. ounces per pound
  - d. grams per cubic foot
3. To control an Activated Sludge Process using MLVSS, the operator must maintain
  - a. A constant concentration of suspended solids in the aeration tank.
  - b. A constant concentration of volatile suspended solids in the return sludge.
  - c. A constant concentration of volatile suspended solids in the waste sludge.
  - d. A constant concentration of volatile suspended solids in the aeration tank.
4. An operator doses the effluent from his plant with 3 mg/l of chlorine to achieve the necessary bacteria kill. If the flow through the plant averages 2.6 MGD, how much chlorine will be used in 30 days?
  - a. 1,246.8 pounds
  - b. 1,951.6 pounds
  - c. 2,397.3 pounds
  - d. 4,503.6 pounds



## ***Approved Training***

April 18, 2007 in Seal Harbor, ME - QA/QC of laboratory Instruments - Sponsored by JETCC – approved for 3 hours

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April 18, 2007 in Saco, ME - Hazard Communication & Personal Protective Equipment – sponsored by WPETC – Approved for 6 Safety hours

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April 18, 2007 in Seal Harbor, ME - Asset Management - Sponsored by JETCC – approved for 3 hours

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April 26, 2007 in Winthrop, ME - In-House Process Control Test and Working with Your Contract Laboratory - Sponsored by JETCC – approved for 6 hours

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April 27, 2007 in Washburn, ME – Pumping System Assessment – Sponsored by Efficiency Maine – Approved for 8 hours

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May 1 & 2, 2007, in North Conway, NH - Advance Process Control for Activated Sludge - Sponsored by NEIWPC – approved for 12 hours

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May 8, 2007 in Saco, ME - Bureau of Labor Standards: *Safety Update* - sponsored by WPTEC – Approved for 6 Safety hours

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May 15, 2007 in Belfast, ME - Bureau of Labor Standards: *Safety Update* - sponsored by WPTEC – Approved for 6 Safety hours

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May 22, 2007 in Houlton, ME - Bureau of Labor Standards: *Safety Update* - sponsored by WPTEC – Approved for 6 Safety hours

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May 30, 2007 in Bangor, ME – Chemical handling Safety - sponsored by MRWA – Approved for 4 Safety hours

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May 31, 2007 in Waterville, ME – Chemical handling Safety - sponsored by MRWA – Approved for 4 Safety hours

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May 31, 2007 in Madawaska, ME – Chemical handling Safety - sponsored by MRWA – Approved for 4 Safety hours

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May 31, 2007 in Saco, ME - Basic Instrumentation & Process Control Systems: *A Systems Approach* - sponsored by WPTEC – Approved for 6 hours

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June 6, 2007 in South Berwick, ME – Chemical handling Safety - sponsored by MRWA – Approved for 4 Safety hours

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June 6, 2007 in Topsham, ME - Coli form Bacteria: *Analytical Procedures* - sponsored by WPTEC – Approved for 6 hours

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June 13, 2007 in Topsham, ME - pH & Total Suspended Solids (TSS): *Analytical Procedures* - sponsored by WPTEC – Approved for 6 hours

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Note: JETCC stands for Joint Environmental Training Coordinating Committee – PO Box 487 – Scarborough, ME 04070-0487 – Tel (207) 253-8020

Efficiency Maine is a program of the Maine Public Utilities Commission - 18 State House Station, Augusta, ME 04333-0018  
Tel: 207-287-8350

MRWA stands for Maine Rural Water Association - 14 Maine Street, Box 36 - Brunswick, ME 04011 – Tel (207) 729-6569

NEIWPCC stands for New England Interstate Water Pollution Control Commission – 116 John St. – Lowell, MA 01852-1124 – Tel (978) 323-7929

WPETC stands for Wright Pierce Environmental Training Center, 99 Main Street, Topsham, ME 04086 – Tel. 207-725-8721



## Spring 2007 Exams

The spring exam will be given in the usual locations on Wednesday, May 16, 2007. If you signed up for the exam, you should have received your notification letter by now. If you have not received notification, contact JETCC at 253-8020. If you missed the deadline for the Spring exam, the next exam will be given on November, 14, 2007

### Answers to *For Practice*:

1. a. It becomes very difficult to pump sludge, even using positive displacement pumps, when the concentration reached 10%.
2. b. 1 mg (milligram) is 1/1000 of a gram. 1 liter of water has, by definition, a mass of 1000 grams. 1000 grams equals 1,000,000 milligrams. Thus, 1 milligram is 1/1,000,000 of a liter so  $1 \text{ mg/L} = 1$  part per million
3. d. MLVSS stands for Mixed Liquor Volatile Suspended Solids. The MLVSS is a gross measure of the portion of the sludge in the aeration basin that is alive and actually taking up waste from the influent. By maintaining a constant concentration of MLVSS in the aeration basin, the operator ensures that there is a population of live, hungry bugs ready to eat the pollutants in the influent
4. b.  $\text{Pounds} = \text{dosage (in mg/L)} \times \text{Flow (in MGD)} \times 8.34 \text{ lbs/gal} \times \text{days}$   
 $\text{Pounds} = 3 \text{ mg/l} \times 2.6 \text{ MGD} \times 8.34 \text{ lbs/gal} \times 30 \text{ days} = 1,951.6 \text{ pounds}$